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DALLAS SEMICONDUCTOR

DS9097U
Universal 1-Wire® COM Port Adapter

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FEATURES

- True-ground interface to an RS232 COM Port for reading and writing 1-Wire devices
- Works with bipolar as well as unipolar logic signals
- Compatible to COM ports of (±)5V to (±)12V (DB-9 version only) or (±)6V to (±)12V (DB-25 version)
- Supports reading and writing at regular and Overdrive speeds
- Provides strong pull-up to 5V for Temperature-, Crypto- and EEPROM 1-Wire devices
- Programs 1-Wire EPROM devices (DB-25 version with external 12V power supply only)
- Communicates at data rates of 9.6 (default), 19.2, 57.6 and 115.2 kbits/s
- Standard DB-9 or DB-25 female connector and 6-lead RJ-11 connector for easy attachment of standard 1-Wire cables and probes
- Includes DS2502 identification chip (DS9097U-009 only)

PIN ASSIGNMENT

DB-25: TXD (2), RXD (3), DTR (20), RTS (4), PC-Ground (7); all other pins not connected
DB-9: TXD (3), RXD (2), DTR (4), RTS (7), PC-Ground (5); all other pins not connected

NOTE:

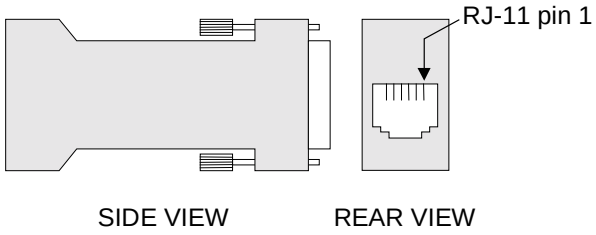
The external supply for the DS9097U-E25 must provide well regulated 12V @ 10 mA minimum, center = GND, outer ring = V+ (Newark Electronics Stock No. 84F2081, Allied Electronics Stock No. 928-9895, Stancor Model STA-300R, or equivalent)

ORDERING INFORMATION

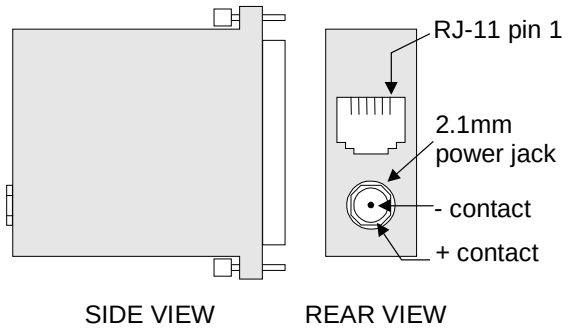
DS9097U-009	DB-9, with DS2502 ID chip
DS9097U-S09	DB-9, no ID chip
DS9097U-E25	DB-25, with EPROM write

PACKAGE OUTLINE

DB-09 version

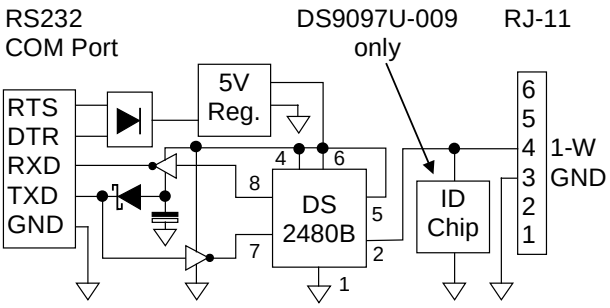


DB-25 version

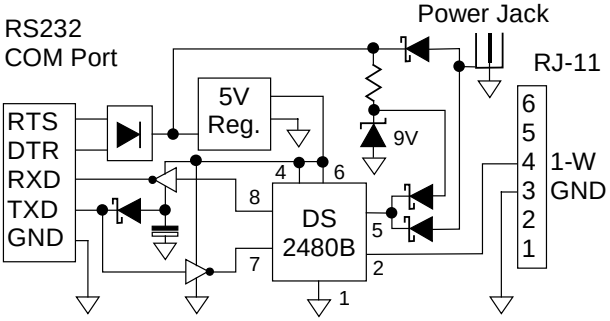


SCHEMATIC (for illustration)

DB-9 version



DB-25 version



DESCRIPTION

The DS9097U is a sophisticated RS232 to 1-Wire Adapter, which performs RS232 level conversion and actively generates the 1-Wire communication signals. Together with an adequate TMEX software driver it enables an IBM-compatible PC to directly communicate with any 1-Wire device connected to the adapter's RJ-11 port. The DB-9 version reads and writes any non-EPROM 1-Wire device. To write to EPROM devices the DB-25 version with external power supply is required.

All DS9097U adapters are based on the DS2480B Serial 1-Wire Line Driver chip and therefore are **not a plug-in replacement for the DS9097 or DS9097E**. The RXD/TXD Polarity Select input of the DS2480B is tied to Vdd (non-inverting). Free software drivers can be downloaded from http://www.ibutton.com/software/tmex/index.html.

The DS9097U communicates with 1-Wire devices at regular speed as well as Overdrive speed. The serial port must support a data transmission rate of 9600 bits/s. Under software control, the adapter can be set up for RS232 data rates of 19200, 57600 and 115200 bits per second. The two higher rates are recommended for communication at Overdrive speed with Overdrive capable devices. Since the DS9097U operates in a byte mode, every data byte received from the RS232 port generates eight time slots on the 1-Wire line. At 19200 bits/s data rate the DS9097U-E25 is already faster than the DS9097 (E) at 115200 bits/s.

Note that there are some COM ports that use signal levels of less than (±) 5V. The DB-9 versions of this adapter will not work with such ports. The DS9097U-E25 adapter, however, will function in most cases if external power is supplied. Without EPROM programming the external power may be anywhere in the range of 6 to 9V. For EPROM programming the voltage must be at 12V in any case. Before using an externally powered DS9097U-E25 with a COM port of less than (±) 5V check whether the COM port will not be damaged by 5V on its RXD input.